

REMARKS

The Office Action raised an issue under 35 U.S.C. §112 and 35 U.S.C. §101 in rejecting Claim 51. It is believed that applicant's amendment to Claim 51 should resolve these issues.

It is believed our specification more than adequately supports our amendments to Claim 51 and reference can be made to the original specification, for example on Page 125, Line 22 to Page 127 where the third embodiment discloses a manufacturing method of an optical disk which would convey to a person of ordinary skill in this field adequate knowledge of our claimed invention. Reference should also be made to Figure 79, steps S212 and S213 which provides respectively a step of multiplexing a video stream with the graphic stream and a step of requiring a recording medium having recorded thereon a digital stream obtained by the multiplexing.

If there are any remaining issues, the undersigned attorney would appreciate a telephone conference.

Applicant had previously explained in our Responding Amendment of March 8, 2010, the reasons for a specific presentation of a decode time stamp and a first presentation time stamp in a data packet, as well as a second presentation time stamp included in a control packet. These features make it possible for a manufacturer such as Panasonic, the assignee of the present invention, to provide a high definition level of graphics display and an economical reproduction apparatus in today's media world.

Setting forth a decode time stamp and a first presentation time stamp in the data packet enables the reproduction apparatus to complete a decoding process within a predetermined limited time period on a reproduction time axis when a processor starts decoding at a start time indicated by the decode time stamp and completes the decoding by the end time of the process indicated by the first presentation time stamp with the values of the first and second presentation

time stamps maintaining the same relationship. The second presentation time stamp indicates a presentation time which is at or after the end time of the decoding processing of the graphics data, so it becomes possible for a reproduction apparatus controller to perform updating within an adequate time period without needing to receive from the decoding processor any type of decoding completion notification on the graphics data, if the controller writes the graphics into the graphics plane within the time indicated by the second presentation time stamp.

Thus, any updating can be synchronized with a display rate of the moving picture regardless of the manner of implementation in a particular reproduction apparatus.

The present invention provides a unique utilization of the functions of a separate processor and a controller in a reproduction apparatus for processing a large amount of graphics in an efficient and economical manner as defined in our specification as follows:

[0016] The manner in which the decoding completion of the processor is notified to the controller depends on the manner in which the processor and the controller are implemented in the apparatus. If the processor and the controller are implemented as programs, notification will be performed by intra-process communication. If the processor and the controller are implemented as independent hardware components from each other, then notification will be performed by an interrupting signal. The amount of time lag of such notification also depends on the implementation manner in the apparatus. If the implementation necessitates a large time lag of notification, there will be a case where updating of graphics cannot be synchronized with the display rate of the moving picture.

[0017] So as to prevent such a case from occurring, it is desirable to have a construction in which the value of the presentation time stamp is obtained by adding a predetermined value to the value of the decode time stamp, where the predetermined value is based on: a longer one of a period required for clearing of a screen, and a period required for decoding of the graphics data; and a period required for writing of the graphics data to the screen.

[0018] The presentation time stamp of a packet storing graphics indicates a decoding ending time, and the presentation time stamp of a packet storing control information indicates a time obtained by adding a

predetermined period to the decoding ending time. Therefore only by referring to the presentation time stamps, the controller can perform updating at an adequate timing without receiving from the processor any decoding-completion notification of graphics data. If such update is performed, it becomes possible to assure update synchronized with the display rate of the moving picture, regardless of the manner of implementation in the reproduction apparatus.

The Office Action is relying upon *Kikuchi et al.* (U.S. Patent No. 7,315,690) as completely anticipating all of the features of Claims 47-51 under 35 U.S.C. §102.

“An anticipating reference must describe the patented subject matter with sufficient clarity and detail to establish that the subject matter existed in the prior art and that such existence would be recognized by persons of ordinary skill in the field of the invention.” See *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990); *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 678, 7 USPQ2d 1315, 1317 (Fed. Cir. 1988).

The *Kikuchi et al.* reference basically represents the state of technical subject matter as set forth in 1995 since it is based on a series of Division and Continuation applications tracing priority to April of 1995.

As presumably the Examiner is aware, there was not any specific rigid technical nomenclature used in describing a patent application invention, particularly from this time period and it is important to determine if the *Kikuchi et al.* reference is a proper anticipatory reference and can teach the features as set forth in our current claims. In defining an invention, a difficulty arises in using a two-dimensional verbal definition to represent a three-dimensional invention. To provide protection to an inventor and notification to the public, a proper interpretation of terms utilized in the claims must be adhered to in order to enable an appropriate evaluation of the invention and its scope relative to cited prior art.

Applicant respectfully submits that the *Kikuchi et al.* reference relates to the same DVD-Video technology as previously cited in the *Murase et al.* reference. Specifically, *Kikuchi*

et al. sought to address a limitation on the maximum data length of packets in an MPEG audio data format that purportedly could prevent a starting ID address of a frame data block from being determined and reproduced. The *Kikuchi et al.* solution was by providing a separate management area and data area with the data area broken into a plurality of program chains and recorded in the data area in a hierarchical structure with the individual programs having a plurality of cells. One cell could be constructed with a plurality of packs that could include a private stream with data indicating the classification of the private stream. The management area would include data for managing the connection between the program chains, program cells and packs.

Accordingly, there was never a recognition of the same problem addressed and resolved by our current claims, nor was there any recognition of providing a degree of independence in processing graphic data in a relatively independent format in a reproduction apparatus.

The Office Action cited Column 9, Lines 26-45 of *Kikuchi et al.* as disclosing an independent processor and a controller. However, *Kikuchi et al.* merely discloses data sorting (i.e., the system processor section 54 sorts the data for playback into video data, audio data, and sub-picture data) and data supply (the video data, audio data, and sub-picture data are supplied to the video decoder section 58, audio decoder section 60, and sub-picture decoder section 62, respectively). The relationship between a processor and a controller of our invention, pertaining to the reproduction apparatus of Claim 47 is not found in the above portion of *Kikuchi et al.*

Kikuchi et al. discloses a PTS (Presentation Time Stamp; time management information for reproduction output) and a DTS (Decoding Time Stamp; time management information for decoding) of a PES packet in Column 20, Lines 44-55, and a start PTS (VOBU_SPTS) and an end PTS (VOBU_EPTS) of VOBU 85 in Column 18, Lines 22-25.

The Office Action asserted that these start PTS and end PTS correspond to a reproduction start time and a reproduction end time (end presentation time stamp, EPTS) of a data packet, respectively. In the bottom row of Figure 6 and Column 11, Line 58 to Column 12, Line 7 of *Kikuchi et al.*, a VOBU (video object unit) is composed of a NAV pack 86, a video pack 87, a sub-picture pack 90, and an audio pack 91. The video pack 87 included in this VOBU constitutes a GOP. In Column 17, Lines 35-56 and Figure 25 of *Kikuchi et al.*, the NAV pack 86 includes a PCI pack and realizes interactive control with use of the sub-picture pack 90.

If the Office Action assertion is correct, the start time and the end time of the sub-picture pack 90 (i.e., graphics) of *Kikuchi et al.* must be defined by a pair of the start PTS (VOBU_SPTS) and the end PTS (VOBU_EPTS) of the VOBU 85.

However, *Kikuchi et al.* only states in Column 18, Lines 22-25, that “the start PTS of VOBU 85 (VOBU_SPTS) indicates the playback start time (start presentation time stamp (SPTS)) of the video data in the VOBU 85 containing the PCI data.” *Kikuchi et al.* also states, “the end PTS (VOBU_EPTS) in the VOBU 85...is the playback start time of the last picture in the last GOP in the VOBU 85.” That is to say, a pair of the start PTS (BOVU_SPTS) and the end PTS (VOBU_EPTS) of the VOBU 85 indicates the playback start time of the first picture data and the playback end time of the last picture data, among all pieces of picture data included in the VOBU.

Although the VOBU of *Kikuchi et al.* includes, separately from a video pack, a sub-picture pack that is to be output after being combined with a decoded/output video stream, the pair of the start PTS (VOBU_SPTS) and the end PTS (VOBU_EPTS) of the VOBU 85 merely indicates a playback start time and a playback end time of pieces of picture data included in the video pack, not the sub-picture pack.

Hence, *Kikuchi et al.* does not track equivalent time stamps indicating a start time and an end time for graphics data.

The Office Action further contended that an output resulting from decoding of sub-picture data by the digital/analog (D/A) and reproduction processing section 64 (*Kikuchi et al.*, Column 29, Lines 5-22) could correspond to a second presentation time stamp included in a control packet. However, this output of sub-picture data has the following meaning: after a digital signal obtained as the result of decoding of video data is converted into an analog signal by the D/A and reproduction processing section 64, the signal is subjected to a frame rate processing, aspect process, pan-scan process and the like according to the set condition and then output to the monitor section 6. Thus, the D/A and reproduction processing section 64 converts a digital signal obtained as the result of decoding of sub-picture data into an analog signal so that the signal is output to the monitor section 6 (step S37). *Kikuchi et al.* only discloses a playback/output of graphics data, since the sub-picture pack 90 of *Kikuchi et al.* is output after being combined with picture data of a video stream.

In order for *Kikuchi et al.* to disclose our claimed second presentation time stamp as being included in a control packet per se, the processing of the D/A and reproduction processing section 64 has to be defined by a use of some type of time stamp in the above portion of *Kikuchi et al.*. However, nowhere in the *Kikuchi et al.* disclosure is there any teaching that an output resulting from decoding of sub-picture data by the D/A and reproduction processing section 64 relies on any kind of time stamp. Therefore, the above portion of *Kikuchi et al.* neither discloses nor teaches a second presentation time stamp included in a control packet.

“[A]nticipation by inherent disclosure is appropriate only when the reference discloses prior art that must *necessarily* include the unstated limitation . . .”

Transclean Corp. v. Bridgewood Services, Inc., 290 F.3d 1364, 62 USPQ2d 1865 (Fed. Cir. 2002)

Accordingly, it is respectfully submitted that Applicant has disclosed that our particular definition of a data packet with graphics data and a decode time stamp, along with a first presentation time stamp, respectively indicating a start time for decoding the graphics data and an end time of the decoding process, along with a separate control packet indicating a second presentation time stamp indicating a presentation time which is at or after the end time of the decoding process, must be given their clear meanings in view of the problem resolved by our present invention and the technical support provided by our specification.

Thus, correctly using this terminology in our claims in the context of the respective operation of a processor for decoding the graphics and a controller to write decode graphics data into graphics plane, by a presentation time, cannot be found in any of the teachings of the *Kikuchi et al.* reference, as demonstrated by our analysis of the actual teaching of the *Kikuchi et al.* disclosure.

Clearly the start time and the end time of simply a sub-picture pack 90 is not defined by a start presentation time and an end presentation time of a VOBU 85. The start PTS and the end PTS simply define a playback start time and a playback end time of the picture data included in the video pack, not a sub-picture pack such as graphics, that can be decoded without requiring an interrupt signal in a reproduction apparatus.

Our controller is operable for updating within an adequate timing without requiring or receiving from the processor any decoding-completion notification of graphics data. As a result, we are capable of providing in a reproduction apparatus an assurance of an update

synchronization with the display rate of a moving picture regardless of the manner of implementation in the reproduction apparatus.

The *Kikuchi et al.* reference was not concerned with these issues or problems, nor is it capable of providing the advantages of our present invention.

It is believed we have adequately shown that a proper reading of the teachings of the *Kikuchi et al.* reference utilized in our current claims is incapable of teaching our present invention alone or in combination with any of the references of record.

Applicant believes that the case is now in condition for allowance and requests an early notification of the same.

If the Examiner believes a telephone interview will help further the prosecution of the case, the undersigned attorney can be contacted at the listed phone number.

Very truly yours,

SNELL & WILMER L.L.P.



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